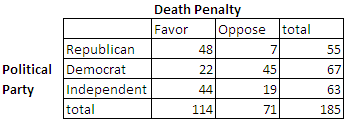
**Stat and Data Analysis Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Ch. 7 and 8 In-Class Review Complete all work on separate paper!**

1. On a typical large plane, there are 150 seats. The chance that the plane is completely filled is 56%. The chance that the plane has 120 seats filled is 24%. The chance that the plane has 70 seats filled is 12% and the chance that the plane has only 30 seats filled is 8%.
   1. Create a probability model for the **number of passengers** on the plane
   2. What is the **expected** attendance on a 747 flight?
   3. What is the chance that less than 100 seats will be filled?
   4. What is the chance that more than 70 seats are filled?
   5. If there are 50 flights in a day, what is the total **expected** attendance?
2. You own a company and have put a bid on two large contracts. The probability that you win Contract A is 76%. The probability that you win Contract B is 45%. The probability that you win both is 33%.
   1. Create the Venn Diagram
   2. What is the probability that you don’t win Contract A?
   3. What is the probability that you win Contract A or Contract B?
   4. What is the probability that you don’t win Contract A but do win Contract B?
   5. What is the probability that you don’t win Contract A or you win Contract B?
   6. What is the probability that you win Contract B given you don’t win Contract A?
   7. What is the probability that if you win Contract A that you don’t win Contract B?
   8. Is winning Contract A and Contract B disjoint?
   9. Is winning Contract A and Contract B independent?
3. P(L) = 0.75; P(D) = 0.44; P(L and D) = 0.38
   1. Create the Venn Diagram
   2. P(L or D) =
   3. P(Lc and D) =
   4. P(L or Dc) =
   5. P(L and Dc) =
   6. P(D|L) =
   7. Are D and L independent?
4. If P(A) = 0.65 and P(B) = 0.30 and P(A∩B) = 0.25, find the following:
   1. P(A U B) =
   2. P(B|A) =
   3. Are A and B disjoint events? Why or why not?
   4. Are A and B independent? Why or why not?
5. If P(M) = 0.53, P(J) = 0.31 and M and J are disjoint, what is the probability of M or J?
6. If P(O)= 0.62, P(H)= 0.48 and O and H are independent, what is the probability of O and H?
7. If P(A) = 0.33 and P(B) = 0.28 and P(B|A) = 0.13, find the following:
   1. P(A and B) =
   2. P(A or B) =
8. If *P*(*B*) = 0.34, *P*(*A*∪*B*)=0.8, and *P*(*A*∩*B*) = 0.1, find *P*(*A*).
9. Below are the results of a survey of American voters. It lists their political party and their feelings on the death penalty.



Find the probability of the following things. Don’t forget to put them into notation first!

* 1. Being a Republican
  2. Opposing the death penalty
  3. Not being an Independent
  4. Democrat and Favoring
  5. Republican or Opposing
  6. Independent given that you Oppose
  7. Republican give that you Favor
  8. Are Political Party and Death Penalty feelings independent? Justify.

1. Dan’s Diner employs 3 dishwashers. Al washes 40% of the dishes, Betty washes 25% of the dishes, and Chuck washes 35% of the dishes. However they all break some! Al breaks only 1% of his, Betty breaks 3%, and Chuck breaks 2%.
   1. Create a tree diagram for this situation
   2. What is the probability of Al washing AND breaking a dish?
   3. What is the probability of breaking a dish overall?
   4. Given that a dish is **not** broken what is the probability that Betty was washing?
   5. You go to Dan’s Diner for dinner one night, and you hear a dish break in the back. What is the probability that Chuck was the one washing the dishes?
   6. If you know that no dishes broke one night, what is the probability that Al was washing?
2. An Olympic archer is able to hit the bull’s eye 80% of the time. He shoots 3 arrows. Assume all shots are independent of each other.
   1. Use a tree diagram to help you create a probability model for the number of hits he gets in 3 attempts
   2. What is the probability that he gets no hits?
   3. What is the probability that he hits the target all 3 times?
   4. What is the probability that he hits the target less than 2 times?
   5. What is the probability that he hits the target at least 2 times?
3. There is a lottery going on in town. 2000 tickets are sold. They cost $2 each. There is one grand prize of $500, 10 2nd place prizes of $100, 20 3rd place prizes of $50, and 40 4th place prizes of $10.
   1. Create a probability model
   2. What is the expected winning with 1 ticket?
   3. If I bought 20 tickets, what is my expected winning?
4. On a certain day, there is a 21% chance for a pop quiz in class. The probability of Jim remembering to bring his calculator to class **and** there being a pop quiz that day is 12%. What is the probability that Jim brings his calculator given **that** there is a quiz?